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(54) A flexible, kink-resistant catheter.

(57) An extremely small diameter epidural catheter (101) is disclosed which is both flexible and kink-resistant when flexed. The catheter (101) includes a tubular sheath or tube (104) having a passageway therein for the delivery of fluids to biological tissue. Positioned in the passageway is a coil (105) which is expansion-fitted therein to form a composite wall structure which is extremely flexible and kink-resistant. This composite wall structure is utilized to form a catheter having an extremely small outside diameter (106) in a range of 0.010" to 0.032" for delivering acceptable levels of fluid volume. The coil (105) comprises a plurality of closely spaced turns (110) extending from the proximal to almost the distal end thereof. About the distal end of the coil (105) is a number of loosely coupled or relaxed turns (111) which adds further flexibility to the distal end of the catheter (101). The tubular sheath (104) of the catheter (101) comprises a high tensile or flexural strength material which does not rupture or tear when the catheter (101) is bent or flexed. Maintaining the ratio of the outside diameter (107) of the wire coil (105) to the cross-sectional diameter (113) of the individual turns within a range of 4 to 10 prevents the tubular sheath (104) from either rupturing or

kinking when the catheter (101) is flexed or bent.

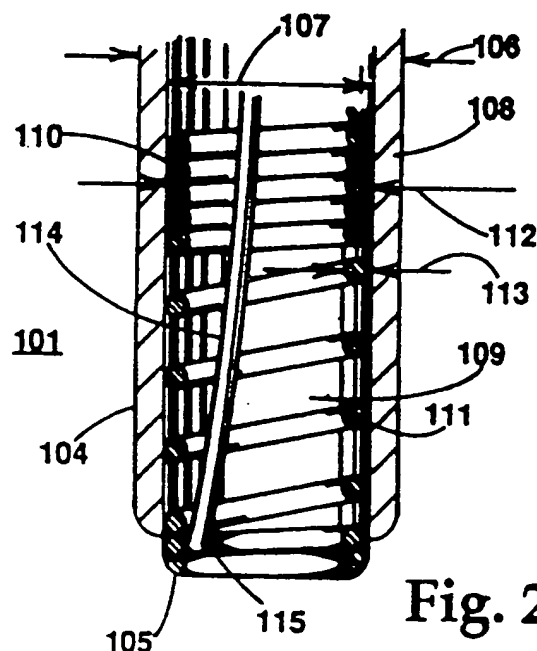


Fig. 2

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